Application No.: 09/639,636   RD25905-6

LISTING OF CLAIMS

Claims 1-9 (canceled)

Claim 10 (previously amended). A system for patterning a substantially transparent polymer substrate of an anti-scatter x-ray grid, the system comprising:

a high power laser for providing laser light;

a beam homogenizer for conditioning the laser light; and

a phase mask for creating a pattern of the conditioned laser light while reducing an amount of the conditioned laser light which is lost to the phase mask;

the laser, the beam homogenizer, and the phase mask being positioned for ablating openings having slopes less than or equal to 0.25 degrees and extending completely through an anti-scatter x-ray grid substrate having a thickness ranging from 0.3 millimeters to 1.5 millimeters.

Claim 11 (original).   The system of claim 10 further including an objective lens for focusing the pattern of conditioned laser light on the substrate.

Claim 12 (original).   The system of claim 11 wherein the objective lens comprises an axial gradient-index lens.

Claims 13-14 (canceled)

Claim 15 (currently amended). The system of claim 11 wherein the laser, the beam homogenizer, the phase mask, and the objective lens are configured for the focused pattern of conditioned laser light is capable of forming a complex pattern of ablated portions of the substrate.

Claim 16 (currently amended). The system of claim 11 wherein the laser, the beam homogenizer, the phase mask, and the objective lens are configured for the focused pattern of conditioned laser light is capable of forming a pattern of ablated portions of the substrate designed to match a pattern of an image detector with which the anti-scatter x-ray grid can be used.

Claim 17 (currently amended). The system of claim 11 wherein the laser, the beam homogenizer, the phase mask, and the objective lens are configured for the focused pattern of conditioned laser light is capable of forming a pattern of ablated portions of the substrate designed to optimize utilization of the laser beam.

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Claim 18 (previously added).   A system for fabricating an anti-scatter x-ray grid for medical diagnostic radiography, the system comprising:

a sub-system for providing a high laser beam fluence with low beam divergence, the sub-system including (a) a phase mask between a substantially transparent substrate and a high power laser and (b) a beam homogenizer for conditioning the laser beam to optimize utilization of beam energy delivered by the laser;

means for ablating portions of the substrate through the phase mask with the conditioned laser beam;

means for filling the ablated portions of the substrate with a substantially absorbent material; and

means for removing additional portions of the substrate while permitting selected portions of the substrate to remain.

Claim 19 (previously added).   The system of claim 18 further including an objective lens positioned between the phase mask and the substrate.

Claim 20 (previously added).   The system of claim 18 wherein the ablating means includes means for forming a complex pattern of ablated portions of the substrate.

Claim 21 (previously added).   The system of claim 18 wherein the ablating means includes means for forming a pattern of ablated portions of the substrate designed to match a pattern of an image detector with which the anti-scatter x-ray grid can be used.

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